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COMMENTS
ON BEHALF OF THE
NATURAL RESOURCES DEFENSE COUNCIL
REGARDING THE PROPOSED DECISION ON A
REQUEST FOR AN EXTENSION
OF THE LAND DISPOSAL RESTRICTIONS FOR
THE U.S. DEPARTMENT OF ENERGY

(57 Fed. Reg. 22024, May 26, 1992)

Docket Number F-92-ECPP-FFFFF

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November 12, 1992





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RCRA Docket; (OS-305)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460
ATTENTION: Docket No. F-92-ECPP-FFFF

To Whom It May Concern:

On behalf of the Natural Resources Defense Council, I am pleased to submit the attached comments of the proposed "Land Disposal Restrictions (LDR); DOE Mixed Waste Extension Application."

The LDR extension requested by DOE should be abandoned. If DOE does not withdraw the petition, EPA should deny the request. The original incomplete proposal provided sufficient grounds for denying the petition because it was inadequate and inappropriate. The Conference Report for the Federal Facilities Compliance Act of 1992 (FFCA) subsequently indicated that the FFCA "obviated the need for EPA to pursue the case-by-case petition." We are disturbed to learn that, despite enactment of the FFCA, DOE is continuing to pursue this mixed waste extension. Given the enormous problems at DOE facilities, this misguided CBC-extension effort amounts to mismanagement of scarce resources without any environmental benefit or financial savings. EPA should not be complicit in this mismanagement and should deny the petition.

Our comments are also relevant to the implementation of the provisions of the FFCA. Consequently, we are simultaneously submitting our comments to the lead EPA offices responsible for implementing the provision of the FFCA. A variety of issues raised by the proposed CBC extension must still be resolved in implementing the FFCA - waste streams must be accurately inventoried and projected, technologies must be developed and tested and treatment facilities must be built.

Please call me if you have any questions.

Sincerely,

James D. Werner
Senior Environmental Engineer

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SUMMARY

The case-by-case extension requested by DOE should be abandoned. If DOE does not withdraw the petition, EPA should deny the request. The original partial proposal provided sufficient grounds for denying the petition because it was inadequate and inappropriate. Subsequently, the Conference Report to the Federal Facilities Compliance Act of 1992 (FFCA) subsequently indicated that the FFCA "obviated the need for EPA to pursue the case-by-case petition."

In addition, NRDC objects to EPA's attempt to make findings necessary to the proposed extension in piecemeal rulemakings. If EPA wishes to solicit comments on options for interpreting demonstration requirements (e.g., 40 CFR 268.5(a)(2)) an Advanced Notice of Proposed Rulemaking would be appropriate. It is completely inappropriate to require parties who wish to reserve their right to appeal to comment on what is a wholly speculative proposal. EPA nonetheless seeks to require parties to go to the expense of providing comments on other findings, based on EPA's speculation that it would someday propose to make a finding of compliance with 40 CFR 268.5(a)(2). If and when EPA proposes to make all the findings necessary to take final agency action, EPA should then accept comments on all such findings and on the proposed action as a whole. NRDC reserves the right to provide further comments on each necessary finding at such time, if any, that EPA proposes to grant the extension at issue.

Our comments are submitted pursuant to the EPA request, but are also relevant to the implementation of the provisions of the FFCA. Consequently, we are simultaneously sending a copy of these comments to the EPA offices responsible for implementing the provision of the FFCA. A variety of technical and policy issues that were raised by the proposed CBC extension must still be resolved in implementing the FFCA.

1. INTRODUCTION

The Environmental Protection Agency (EPA) is proposing to grant an extension,¹ sought by the Department of Energy (DOE), to the imposition of Land Disposal Restrictions for certain hazardous and radioactive ("mixed") wastes. This proposal is another in a long line of attempts by DOE to exempt itself from the nation's environmental laws, particularly RCRA. Just as we have opposed DOE's myriad attempts over the last decade to avoid its environmental responsibilities, we do so today in the strongest possible terms. Moreover, the Federal Facilities Compliance Act of 1992 has obviated any perceived need for the proposed extension, which should therefore be withdrawn or denied.

a. **Mixed Wastes Pose Significant Radiological and Chemical Hazards.**

The treatment, storage and disposal of mixed chemical and radioactive waste at facilities owned or operated by the Department of Energy (DOE) pose substantial hazards. For more than 40 years, DOE facilities have been generating hazardous wastes through a variety of industrial processes and decontamination and decommissioning. Each year, DOE facilities generate millions of gallons of solvents, caustics, acids, and heavy metals; much of this waste contains radioactive materials.

¹ DOE has, in effect, petitioned for 352 case-by-case extensions to the imposition of land disposal restrictions under RCRA (309 low level, 41 transuranic, and two high level mixed waste streams at 31 facilities).

Over the years, DOE has disposed of a large proportion of these mixed wastes through direct discharge to unlined pits, ponds, trenches and lagoons. Where the wastes contain particularly high levels of radioactivity they have usually been stored in metal tanks. Solid mixed and hazardous wastes have generally been placed into trenches or "burial grounds." These disposal practices have caused significant on-site and off-site groundwater contamination at a number of DOE facilities.² The health risks from the hazardous chemical constituents of mixed waste often outweigh the dangers from the associated radioactivity.

Until the adoption of RCRA, DOE managed the hazardous and mixed wastes at its facilities in virtually the same manner as it managed purely radioactive wastes, i.e. under the general authority of the Atomic Energy Act (AEA). However, the AEA and associated guidance gave DOE almost no direction concerning the proper handling and disposal of chemical and mixed wastes. DOE's waste disposal practices focused on mitigating the radioactive effects of mixed wastes but paid little attention to the health risks posed by the hazardous chemical constituents.

b. DOE Has Long Sought to Evade Its RCRA Responsibilities for Mixed Wastes.

DOE initially claimed complete exemption from RCRA and its regulations. DOE argued, among other things, that the AEA precludes EPA or state regulation of hazardous and mixed wastes

² DOE, "Environmental Restoration and Waste Management Five-Year Plan," DOE/S-0090P, August 1991; p. 210. Office of Technology Assessment, "Complex Cleanup", OTA-O-484, February 1991.

under RCRA at the Department's facilities, and also that application of RCRA would jeopardize national security.

DOE's claims were rejected in a case brought by NRDC and the Legal Environmental Assistance Foundation (LEAF) against the Department for RCRA violations at its Y-12 Plant in Oak Ridge, Tennessee.³ The court found RCRA applicable to hazardous waste disposal at the Y-12 facility and ordered DOE to file for RCRA permits immediately.

DOE did not appeal the LEAF decision and indicated that it would apply the rule established by the case to all of its AEA facilities. However, immediately following the decision, DOE asserted that while non-radioactive hazardous wastes were covered by RCRA, mixed wastes were not. In November 1985, the Department proposed a rule that would redefine much of the DOE mixed waste as "byproduct material" under the AEA which is, by definition, exempt from RCRA.⁴ The effect of the rule would have been to exclude much of the DOE mixed waste from RCRA regulation. The proposed rule was heavily criticized by states and environmental organizations. Moreover, in the fall of 1986, 70 members of Congress signed a letter to DOE Secretary Herrington calling for its withdrawal.

In November 1986, DOE proposed to EPA a more limited exemption from RCRA for high-level and transuranic mixed wastes. EPA's Mixed Energy Waste Study (MEWS) task force was formed in

³ LEAF v. Hodel, 586 F. Supp. 1163 (E.D. Tenn., 1984).

⁴ 50 Fed. Reg. 45736 (November 1, 1985).

response. DOE did not get strong support for its proposal in the task force's March 1987 report.⁵ Lacking EPA's backing⁶, and with the likelihood of mixed waste legislation in Congress and litigation by states and environmental groups, DOE, in May 1987, issued an "interpretive rule" acknowledging that all DOE radioactive wastes which are hazardous under RCRA are subject to regulation under both RCRA and the AEA.⁷

Unfortunately, this did not end DOE's attempts to evade RCRA. Since 1987, DOE has wasted significant resources -- that could have been applied to compliance and cleanup -- on myriad attempts to thwart the implementation of the law. DOE has argued, for example:

- that specific waste streams at facilities like Rocky Flats and Savannah River were exempt;
- that federal CERCLA authority "trumped" state RCRA authority at many facilities; and
- that application of RCRA to mixed wastes would increase radiation hazards.

Most recently EPA proposed, apparently at DOE's urging, yet another end run around RCRA.⁸ The proposed "Hazardous Waste Identification Rule" (HWIR) would have exempted low concentrations of chemically-hazardous constituents at DOE facilities from Subtitle C. In addition, under the proposed HWIR

⁵ Mixed Energy Waste Study (MEWS), EPA/OSWER, March 1987.

⁶ EPA had determined that mixed wastes were subject to RCRA regulation. 51 Fed. Reg. 24504 (July 3, 1986).

⁷ 52 Fed. Reg. 15937, May 1, 1987. 10 C.F.R. §962.3(b) (1992).

⁸ 57 Fed. Reg. 21450, May 20, 1992

"mixed wastes with higher concentrations of chemically-hazardous constituents" would be exempted as well based on a "contingent management approach" under which AEA controls designed to deal with radioactive hazards would also somehow be deemed sufficient to protect against risks posed by chemically-hazardous constituents. One of the inadequacies of EPA's proposed case-by-case extension is its failure to consider the impact of the HWIR published a week earlier.

As we demonstrated in previous comments to EPA,⁹ DOE's arguments against RCRA's application to mixed wastes have not made sense technically or legally over the past ten years and they still do not today. Far from demonstrating the need for a RCRA exemption, evidence to date points to the need for strengthened hazardous waste regulation.

Now, after granting DOE consecutive one-year national capacity variances, EPA is proposing to grant DOE an additional two-year extension to the imposition of land disposal restrictions. But, it is important to consider the history of extensions and variances granted to DOE for mixed waste and the ineffectiveness of the measures in compelling DOE to develop mixed waste treatment capacity. Moreover, it is important to recognize that the problem involves not merely paperwork violations, but poses real technical problems to be solved and

⁹ "Comments of the Environmental Defense Fund and the Natural Resources Defense Council on the Proposed Hazardous Waste Identification Rule", Rulemaking Docket No. F-92-HWEP-FFFFF, 57 Fed. Reg. 21450, May 20, 1992, p. 72..

actual or potentially significant environmental threats. Virtually every DOE site has a significant backlog of mixed waste with almost nowhere to go and few treatment alternatives in sight. Instead of forcing DOE to come to grips with this steadily growing backlog and develop safe treatment facilities, EPA has instead responded with piecemeal regulatory fixes. Issuance of another in a series of seemingly automatic, on-demand extensions and variances to DOE would indicate that EPA is complicit in perpetuating the failure of the Government to deal forthrightly with mixed waste. EPA has taken virtually every action available to excuse DOE's inaction on mixed waste. EPA should encourage those offices within DOE that are seeking legitimate solutions to mixed waste problems rather than sanction DOE elements that continue to attempt to evade compliance and cleanup.

Last year, EPA provided considerable laxity in its enforcement approach to mixed waste.¹⁰ This approach provided no assurance that any additional treatment capacity would be developed before it expired at the end of 1993:

If sufficient treatment capacity becomes available before December 31, 1993, EPA will terminate this policy. If necessary, EPA may also renew this policy beyond 1993.¹¹

EPA's enforcement policy can hardly be viewed as a positive force for resolving the mixed waste problems facing DOE. EPA should finally acknowledge that, in the absence of an aggressive

¹⁰ 56 Fed.Reg. 42730, August 29, 1991.

¹¹ 56 Fed.Reg. 42731, August 29, 1991.

enforcement strategy to compel DOE to develop sufficient mixed waste treatment capacity, DOE will continue to seek extensions and variances to compliance with RCRA requirements. Recognizing that the existing barrel of extensions and variances was running dry, DOE returned to the Congressional well to seek further delays in the imposition of RCRA on mixed wastes through amendments to the Federal Facilities Compliance Act (FFCA). In 1992, Congress substantially amended earlier versions of the FFCA to accommodate DOE concerns about the lack of adequate mixed waste treatment capacity in the face of RCRA land disposal restrictions and the storage prohibition. Through negotiations a bill was developed to establish schedules for DOE to come into compliance with RCRA for its mixed wastes. President Bush signed the FFCA on October 6, 1992. The law should finally end DOE's attempts to evade RCRA compliance. It provides a three-year delay to the effective date for the waiver of sovereign immunity to allow DOE to negotiate agreements, except for wastes already subject to "an existing agreement, permit or administrative or judicial order."¹²

The FFCA acknowledged that the value of existing agreements such as the one signed by the Colorado Department of Health, EPA Region VIII, and DOE in 1989 for the Rocky Flats Plant. This particular agreement required that DOE prepare a report listing the mixed waste then subject to the RCRA storage prohibitions for

¹² FFCA 102(c)(2); 42 U.S.C. 6961(c)(2)

land disposal restricted wastes.¹³ Arising out of a compliance problem for an individual site, this agreement and a subsequent report served as an important first effort to address the mixed waste problem nationally by gathering information. This scope of this report, however, did not include developing a plan for dealing with mixed wastes. Nearly three years later, EPA has reprinted essentially an updated version of this report in the Federal Register in its proposal to grant DOE a case-by-case extension to land disposal restriction requirements. This update also fails to provide a plan for developing mixed waste treatment capacity - a fact that DOE freely acknowledges in its initial application for the case-by-case extension:

This application is not intended to serve as a planning document for specific treatment, recovery or disposal of any individual [radioactive mixed waste] stream.¹⁴

Hence, as a result of nearly a decade of addressing the problem largely through legal maneuvering rather than technical planning and construction, DOE is just about as far from solving its mixed waste problems as it was during the 1980s when it unsuccessfully fought the Y-12 case. Certainly, due consideration must be given to the very real technical challenges facing the design and development of a mixed waste treatment facilities. However, these technical challenges are not

¹³ 40 CFR 268.5. The "National Report on Prohibited Wastes and Treatment Options" was submitted to EPA on January 16, 1990.

¹⁴ Duffy, Leo, DOE, Letter to W.K. Reilly, EPA, November 15, 1991. [emphasis supplied]

insurmountable, and are essentially the same now as they were in 1984 when DOE lost the Y-12 case.

c. DOE Should Cease Generation of Most Mixed Waste to Focus its Technical Resources on Solving Existing Problems.

The proper path to solving DOE mixed waste problems lies in developing individual, enforceable compliance schedules that chart a course towards developing, constructing and safely operating sufficient mixed waste treatment capacity -- exactly the course charted by the FFCA. Unfortunately, DOE appears to be resisting the Congressional intent of the FFCA, and has not withdrawn its CBC-extension petition. Moreover, DOE continues to generate and plan for the generation of additional mixed wastes without resolving the problems with its existing stockpiles of mixed waste. Hence, DOE appears to be mismanaging its resources, and should more clearly focus those resources on solving the mixed waste technical problems.

To help achieve this focus, DOE should cease generation of land disposal restricted wastes for which inadequate treatment or reuse capacity exists, except for the following circumstances:

- decontamination activities approved by a regulatory oversight agency;
- limited research and clinical activities such as therapeutic medical isotope production;
- warhead dismantlement;

- any activities required by legal agreement; and
- activities that are deemed to be in the paramount interest of the U.S. that require restart of waste producing operations.¹⁵

This waste production moratorium should continue until DOE develops sufficient mixed waste treatment capacity or enters into legally binding agreements with enforceable schedules to development safe treatment or reuse facilities.

Such an action would help focus DOE's considerable resources and technical abilities to resolving this problem. DOE's continued pursuit of the CBC extension even after enactment of the FFCA demonstrates the Department's difficulty with effectively managing its resources on productive activities. Halting operations that produce mixed waste would shift DOE's institutional focus toward resolving, rather than creating, mixed waste problems. Also, Congress and the Office of Management and Budget are more likely to support adequate funding when a specific compliance schedule exists for developing treatment technologies.

2. EPA'S PROPOSED EXTENSION IS INAPPROPRIATE AND UNWARRANTED FOR MANY OF THE PROPOSED WASTES.

- a. **EPA's Proposal is Inappropriate Because DOE's Situation is Not Consistent to the Circumstances Envisioned by Congress in Establishing the Exemption.**

¹⁵ Such an exemption possibility already exists at 42 USC 6961.

EPA is inappropriately proposing to use section 3004(h)(3) of RCRA and 40 CFR 268.5 to grant DOE a case-by-case extension of the effective date of the land disposal restrictions applicable to "Thirds" mixed radioactive and hazardous wastes. In its proposal EPA acknowledges that DOE plans to seek an additional one-year variance -- the maximum available under RCRA -- until May 8, 1994.¹⁶ Moreover, DOE has indicated that it does not plan to provide adequate mixed waste treatment capacity until 22 years into the future (See Table 1). Hence, DOE is seeking a case-by-case extension as a temporary exemption from meeting land disposal restrictions.

The legislative history of RCRA indicates, however, that a case-by-case extension is not intended to be used in this manner. Instead, the extension is to be used only when the applicant is making a good-faith effort to comply with the land disposal prohibitions on their effective date but, due to circumstances beyond its control, cannot meet that date:

"In order to encourage the development and construction of alternative capacity, the effective date of prohibitions should not extend beyond two years except in narrowly defined circumstances. Therefore, extensions beyond an effective date established by the Administrator may only be granted on a case-by-case basis for one year and renewable for no more than one additional year (i.e., a maximum of two years total), where an applicant demonstrates to the Administrator that there is a binding contractual commitment to construct or otherwise provide such alternative capacity but due to circumstances beyond the control of the applicant, such alternative capacity cannot

¹⁶ 57 Fed. Reg. 22035.

reasonably be made available by the effective date. This provision is intended only to accommodate those making a good faith effort to meet the effective date but who are unable to do so due to circumstances beyond their control...The Administrator should use this discretion sparingly and only in cases of an extraordinary nature."¹⁷

In its implementing regulations, the Agency articulated the limits of the case-by-case extensions: "Congress, however, intends for the land disposal restrictions to 'go into effect immediately upon promulgation whenever and wherever possible.'"¹⁸ Further, "EPA believes that Congress intended the variance and extension provisions of section 3004(h) to encourage the development of safe alternatives to land disposal."¹⁹ To help implement this policy goal, the Agency indicated that it would require that the applicant prove that sufficient waste treatment, recovery or disposal capacity would be provided at the end of the extension:

The Agency will require... that the applicant provide sufficient information (e.g., waste quantities and design data) to demonstrate that, after the extension, sufficient alternative capacity will exist for the waste that is the subject of the application. EPA does not believe that an extension should be granted if the applicant is not providing full capacity for the waste.²⁰

¹⁷ S. Rep. No. 284, 98th Con., 1st Sess. 19 (Oct. 28, 1983).

¹⁸ 51 Fed. Reg. 1602, 1692 (Jan. 14, 1986), quoting from S. Rep. No. 98-284, 98th Cong. 1st Sess. 19 (1983).

¹⁹ 51 Fed. Reg. 1697, January 14, 1986.

²⁰ 51 Fed. Reg. 1697, January 14, 1986.

TABLE 1. AVAILABILITY OF MIXED WASTE TREATMENT[A]

	Treatment Technology	Date Available
a.	Incineration	2004
b.	Stabilization	2004
c.	Oxidation	1997
d.	Lead decontamination/ microencapsulation	1997
e.	Cyanide destruction	1999 ¹
f.	Inorganic debris	1999
g.	Ion exchange	No date
h.	Vitrification	2014

Source: Table A-3 57 Fed. Reg. 20034, May 26, 1992.

A. The date given is the year DOE has indicated that facilities will be available to provide sufficient treatment, reuse or disposal capacity to meet the minimum demonstration required by RCRA.

¹ Text of proposal (57 Fed. Reg. 22044) indicates that the unit will be "in operation" by 1997.

In its proposed extension, EPA appears to ignore this legislative mandate and its own regulations. EPA's assertion that an extension is available even when the applicant acknowledges that it will not achieve compliance within the available two-year extension period²¹ is contrary to Congressional intent, illegal and unwise. The purpose of the extension is to provide time to achieve compliance to parties who have entered into binding commitments to provide capacity but, due to circumstances beyond their control, are unable to make the deadline. The extension was never meant to apply to a party that, more than seven years after enactment of RCRA's LDR requirements, still has no firm plan for compliance. Such a party - DOE in this instance - clearly needs an enforceable compliance schedule to get it on track. An extension would merely eliminate the ability of enforcers (i.e, authorized states) to insist on such schedules and could undermine the implementation of the FFCA recently signed by the President. Compliance schedules negotiated by states and DOE will also assist DOE in negotiations with the Office of Management and Budget to seek support for funding requests to achieve compliance. An extension merely postpones the effective date of the enforcement authority of the states and, thus, delays progress on compliance agreements.

²¹ 57 Fed.Reg. 22035, May 26, 1992.

EPA faced a similar situation in promulgating Clean Air Act regulations,²² which established a compliance deadline that might be impractical for all regulated entities to meet. EPA, by regulation, resolved the issue by mandating that:

If it physically impossible for a mill owner or operator to complete disposal within that time, EPA shall, after consultation with the mill owner or operator, establish a compliance agreement which will assure that disposal will be completed as quickly as possible.

A similar result is appropriate here, except that the compliance agreement should be negotiated by the applicable regulatory agency responsible for implementing RCRA in each affected state. It would be wholly inappropriate for EPA to attempt to preempt the regulatory authorities of authorize states by entering into a "national" IAG.

b. Site-by-Site Interagency Agreements are a More Appropriate Mechanism for Solving the Mixed Waste Problem.

Having determined that DOE fails to qualify for a case-by-case extension EPA should devote itself to negotiating with DOE, together with appropriate states and Native American Indian tribes, site-specific interagency agreements (IAGs). These IAGs would provide a more appropriate mechanism for developing adequate treatment or reuse capacity for mixed wastes. This is the approach agreed to in the FFCA after consultation with EPA, DOE, OMB and other Federal agencies. We are concerned that

²² 40 CFR 61.222

present course being pursued by EPA will not result in resolution of the problem of accumulating mixed waste and will siphon valuable technical resources from productive tasks such as waste characterization and treatability plans, which are desperately needed. DOE indicated that it was not providing "a planning document for specific treatment, recovery or disposal of any individual [radioactive mixed waste] stream",²³ when this is precisely what is called for logically in the FFCA. EPA and DOE should consider imposing a moratorium on continued generation of LDR mixed wastes, except in certain circumstances described above in the Introduction (see section 1.c.). At a minimum, EPA and states should include in its negotiated site-specific agreements a moratorium on the generation of mixed wastes except in these circumstances, if DOE fails to enter into and comply with enforceable agreements. Some national agreement may be warranted to address cross-cutting issues such as the establishment of regional treatment facilities.

c. EPA's Proposal Includes Wastes for Which a Case-by-Case Extension is Not Applicable.

EPA's authority for granting a case-by-case extension to DOE for land disposal restrictions deadlines is limited to certain wastes; it cannot grant an extension for "California List, solvent and dioxin wastes."²⁴ For these waste the land disposal

²³ Duffy, Leo, DOE, Letter to W.K. Reilly, EPA, November 15, 1991.

²⁴ 57 fed.Reg. 22026, May 26, 1992.

restrictions, including the storage prohibitions, already apply. EPA can only grant extensions to "Thirds" wastes. Moreover, an extension for waste that is no longer being generated, or which will not be "managed"²⁵ after May 8, 1992 is not warranted because, according to EPA, wastes placed in storage prior to this date are not subject to the storage prohibition, unless they are removed from storage.²⁶ EPA failed to evaluate DOE's application for a case-by-case extension to determine whether the waste streams qualify for or warrant an extension.

Before publishing its extension proposal, EPA should have made an independent determination of the accuracy of DOE's list of applicable wastes. For example, some of the liquid high level waste stored in tanks at INEL should be considered "California List" waste for the purpose of RCRA²⁷ because it has a Ph of less than two (2.0).²⁸ Hence, regardless of whether this waste will be generated in the future or removed from storage, it is inappropriate to grant DOE a case-by-case extension for this waste.

²⁵ "Managed" is defined by EPA to include movement out of storage and placed in a new storage facility.

²⁶ 57 Fed.Reg. 22026, May 26, 1992,

²⁷ 40 CFR 268.32(a)(1)

²⁸ Bonkowski, M.J., DOE/ID, Letter to J.D. Werner, NRDC, June 22, 1992. Re: Sodium Waste Reduction at the Idaho Chemical Processing Plant. Attachments to Bonkowski's letter indicate that sodium-bearing high level liquid waste at ICPP has an average pH of 1.45 (0.45-1.92).

The State of Idaho and DOE negotiated a compliance agreement for the treatment of this waste based on the assumption that non-sodium bearing waste - which could be blended with the sodium bearing waste - would continue to be generated from reprocessing. Sodium bearing waste is not calcinable without significant dilution or treatment. However, the traditional source of non-sodium bearing wastes (i.e., reprocessing) has been eliminated by the Administration's decision to halt reprocessing for highly enriched uranium production (See Attachment A).²⁹ Therefore, a new agreement with expedited compliance schedules should be renegotiated, with meaningful public participation.

EPA's proposal indicates that "DOE plans to pretreat this [liquid high level waste] stream to reduce its volume and place the concentrated waste in interim storage."³⁰ Unfortunately, EPA uncritically accepted this assertion from DOE indicating in its proposal that a "Waste Immobilization Facility" would be on-line in 2014.³¹ A recent DOE waste management plan for INEL indicates that treatment of the sodium-bearing waste will not begin until 2013.³² Thus, it is highly unlikely that DOE will be prepared to calcine and then vitrify the sodium-bearing waste

²⁹ Watkins, J.D., Memorandum to R. Clayton, et al., February 24, 1992.

³⁰ 57 Fed.Reg. 22068, May 26, 1992.

³¹ 57 Fed.Reg. 22035 and 22050, May 26, 1992.

³² DOE/ID, "Draft Idaho Chemical Processing Plant Spent Fuel and Waste Management Technology Development Plan", April 24, 1992.

...[make] a good-faith effort to locate and contract with treatment, recovery, or disposal facilities nation-wide.³⁴

Treatment capacity can be obtained in two ways: by building new facilities to handle existing or newly generated wastes, or by reducing the amount of wastes generated in order to make more efficient use of available capacity. A cubic meter of safe treatment capacity that is made available by reducing waste generation is equally as useful as a cubic meter of treatment capacity built as a new facility.³⁵ We are not equipped to evaluate whether DOE has made a good faith effort to obtain necessary treatment capacity through a nationwide search for contract facilities.³⁶ It is clear, however, that DOE has failed to make the good faith demonstration pursuant to 40 CFR 268.5(a)(1) in pursuing additional capacity through waste minimization and should therefore be denied an extension.

The importance of waste minimization for capacity assurance is illustrated clearly by a comparison of the waste generation rate given by DOE in November 1991 compared to May 1992 and

³⁴ 40 CFR 268.5(a)(1).

³⁵ This "Demand Side Management" approach has proven very effective in providing additional capacity for electric utilities. See e.g., EPA, "Renewable Electric Generation", EPA/400/R-92/005, March 1992, p.I-14.

³⁶ We should indicate that a large number of treatment technology vendors and designers have contacted NRDC and indicated that DOE and EPA have failed to consider adequately their technology. Without evaluating the effectiveness of each, however, it is not possible to comment on whether these technologies could realistically play a role in provided needed treatment capacity. Several technologies did appear to provide promising prospects worth developing.

only one year after completing construction of the Radioactive Sodium Waste Processing Facility.³³

This example illustrates again the danger of EPA granting a case-by-case extension without performing the necessary technical review of DOE's actual waste generation, storage and treatment plans on a site-by-site, waste-by-waste basis. EPA should not accept, without question or technical scrutiny, DOE's assertions and use them as boilerplate in an unwarranted and unwise Federal Register proposal. This behavior further undermines EPA's credibility as an independent regulatory agency and helps foster the appearance of EPA as a rubber-stamping adjunct to the Department of Energy.

3. DOE HAS FAILED TO MAKE THE NECESSARY DEMONSTRATIONS TO QUALIFY FOR A CASE-BY-CASE EXTENSION.

Even if a case-by-case extension is appropriate, DOE has failed to make a number of the demonstrations required by RCRA to qualify for an extension.

a. DOE Has Failed to Make a Good Faith Effort to Obtain Treatment Capacity or Minimize Waste.

EPA's regulations require that a successful applicant for a case-by-case extension to Land Disposal Restrictions:

³³ DOE/ID, "Idaho National Engineering Laboratory Waste Management Operations Roadmap Document, Update Transmittal of Land Disposal Restrictions Roadmap Document: Predecisional Draft", DOE/ID-10347, April 23, 1992.

TABLE 2

COMPARISON OF DOE MIXED WASTE INFORMATION:
DATA SUBMITTED TO REPRESENTATIVE DINGELL VS. TO THE EPA
RANKED BY EPA GENERATION RATE DATA [A]

Rank	Site (B)	DINGELL DATA [E]		EPA DATA [F]	
		Total Quantity LLMW Generated M3/Year	Total Quantity LLMW Inventory M3	CBC-Applicable LLMW Generated M3/Year	Total Quantity LLMW Inventory M3 (C)
1	RFP	9,900.56	8,388.19	5,795.19	10,049.00
2	SRS	1,237.00	9,035.40	1,233.43	9,035.40
3	Y-12	1,943.02	10,426.30	750.02	7,319.00
4	Fernald	695.00	2,431.43	586.00	3,459.00
5	Sandia/Alb	213.84	412.10	111.84	776.00
6	PORTS	129.29	3,948.36	67.00	4,231.00
7	Hanford	130.00	2,372.00	57.55	2,652.00
8	INEL	60.00	27,058.81	57.08	[C] 63,973.00
9	PGDP	36.08	576.45	26.44	634.00
10	LANL	84.54	316.63	14.42	450.00
11	ORNL	16.11	1,158.07	9.19	823.00
12	LLNL	102.00	198.14	5.00	388.00
13	K-25	537.00	32,698.04	4.00	33,504.00
14	Pantex	26.97	180.19	4.00	221.00
15	ANLE	3.42	62.23	3.20	72.50
16	BNL	8.15	14.93	3.00	27.20
17	ANLW	0.95	9.10	0.85	11.60
18	KCP	0.82	4.93	0.82	6.20
19	KESS	0.35	0.00	0.35	0.50
20	LBL	1.07	11.80	0.28	13.40
21	Mound	0.94	44.12	0.20	49.00
22	KAPL	0.10	0.00	0.10	0.20
23	Fermilab	2.14	0.01	0.08	0.20
24	BAPL	0.89	8.54	0.05	9.90
25	West Vall.	0.05	5.03	0.00	5.00
26	Sandia/Liv	0.32	0.85	0.00	1.30
27	SSFL	0.00	3.64	0.00	3.70
28	ITRI	1.00	1.10		
29	Weldon Sp	0.00	56.11		60.00
30	NTS	48.70	0.00		
31	AMES	0.00	0.10		
32	CISS	0.00	21.68		44.00
33	NRF	0.00	0.00		0.28
34	Princeton	0.02	0.02		
35	GJPO	0.09	0.08		
36	BTCO	0.00	3.84		
	TOTALS	17,658,443.69	60,166,179.75	5,272,980.40	82,967,266.76

[A] For alphabetical listing see Appendix

[B] See abbreviation Appendix

[C] The inventory of Mixed Waste (MW) given is derived directly from the text of EPA's proposal. Whether the inventory includes TRU MW or not is generally unclear from EPA's text.

For INEL, the inventory of MW includes three TRU MW streams.

[D] Generation rates and inventory quantities were derived directly from tables developed for Rep. Dingell. For Hanford, INEL, SRS and WVDP, High Level Mixed Waste data was subtracted from the total mixed waste information provided. For the Hanford site, this included the subtraction of Double Shell Tank Waste (DSTW) labelled as "DST LLW" for generation rates as well as inventory. Based on the information provided in EPA's proposal, this waste stream appears to be more appropriately classified as HLW.

[E] Compilation of Information on U.S. Department of Energy Waste Management and Waste Management Initiatives, Developed in response to a query from Congressman Dingell dated October 30, 1992, prepared November 12, 1991.

[F] 57 Fed. Reg., p. 22054, May 26, 1992.

existing waste inventories (See Tables 2 and 3).³⁷ In November 1991, DOE submitted to the Chairman of the U.S. House of Representatives Committee on Energy and Commerce, Rep. John Dingell (D-MI), a listing of mixed waste being generated and stored. A similar list was produced for each site in EPA's May 1992 proposed extension. A side-by-side comparison of these lists reveals that waste minimization offers an important potential source of additional capacity.³⁸ Table 2 lists each site according to waste generation rate. The Rock Flats Plant generates nearly five times more mixed waste than the second largest generation source -- Savannah River Site.

Also, the fact that most of the mixed waste generated at the Rocky Flats Plant is from environmental restoration projects (Pondcrete/softcrete), suggests the potential for environmental restoration to greatly expand the volume of mixed waste generated in the future. Ten of the top 14 mixed waste generation sites are defense Facilities. Portsmouth Gaseous Diffusion Plant generates the largest volume of mixed wastes among the non-

³⁷ The listing of total generation rate and inventory for each site was compiled by NRDC by summing the waste streams generated and stored at each site. See Table footnotes for additional details.

³⁸ Some of the difference between the two waste lists may be explained by the differences in scope -- the Dingell list includes all mixed waste generation; whereas the EPA list excludes "California List," solvent and dioxin wastes. A comparison of DOE's January 1990 mixed waste report, which focussed solely on this non-CDC applicable waste, however, indicates that this does not explain the difference.

TABLE 3

COMPARISON OF DOE MIXED WASTE INFORMATION:
DATA SUBMITTED TO REPRESENTATIVE DINGELL VS. TO THE EPA
RANKED BY EPA INVENTORY DATA [A]

Rank	Site (B)	DINGELL DATA [E]		EPA DATA [F]	
		Total Quantity LLMW Generated M3/Year	Total Quantity LLMW Inventory M3	CBC-Applicable LLMW Generate M3/Year	Total Quantity LLMW Inventory M3 (C)
1	INEL	60.000	27,058.810	57.080	(C) 63,973.00
2	K-25	537.000	32,698.040	4.000	33,504.00
3	RFP	9,900.560	8,388.190	5,795.190	10,049.00
4	SRS	1,237.000	9,035.400	1,233.431	9,035.40
5	Y-12	1,943.020	10,426.300	750.020	7,319.00
6	PORTS	129.290	3,948.360	67.000	4,231.00
7	Fernald	695.000	2,431.430	586.000	3,459.00
8	Hanford	130.000	2,372.000	57.550	2,652.00
9	ORNL	16.106	1,158.071	9.186	823.00
10	Sandia/Alb	213.840	412.100	111.840	776.00
11	PGDP	36.080	576.453	26.440	634.00
12	LANL	84.540	316.634	14.420	450.00
13	LLNL	102.000	198.140	5.000	388.00
14	Pantex	26.970	180.190	4.000	221.00
15	ANLE	3.419	62.230	3.200	72.50
16	Weldon Sp	0.000	56.105		60.00
17	Mound	0.940	44.120	0.200	49.00
18	CISS	0.000	21.680		44.00
19	BNL	8.150	14.930	3.000	27.20
20	LBL	1.070	11.800	0.280	13.40
21	ANLW	0.948	9.104	0.852	11.60
22	BAPL	0.890	8.542	0.050	9.90
23	KCP	0.816	4.930	0.820	6.20
24	West Vall.	0.051	5.033	0.004	5.00
25	SSFL	0.000	3.636	0.000	3.70
26	Sandia/Liv	0.323	0.850	0.003	1.30
27	KESS	0.350	0.000	0.350	0.50
28	NRF	0.000	0.000		0.28
29	Fermilab	2.136	0.012	0.084	0.20
30	KAPL	0.100	0.000	0.100	0.20
31	Princeton	0.020	0.020		
32	BTCO	0.000	3.840		
33	GJPO	0.093	0.081		
34	NTS	48.700	0.000		
35	AMES	0.001	0.100		
36	ITRI	1.000	1.100		
	TOTALS	24,071,820.304	59,668,938.600	5,238,060.000	82,691,628.00

[A] For alphabetical listing see Appendix

[B] See abbreviation Appendix

[C] The inventory of Mixed Waste (MW) given is derived directly from the text of EPA's proposal. Whether the inventory includes TRU MW or not is generally unclear from EPA's text. For INEL, the inventory of MW includes three TRU MW streams.

[D] Generation rates and inventory quantities were derived directly from tables developed for Rep. Dingell. For Hanford, INEL, SRS and WVDP, High Level Mixed Waste data was subtracted from the total mixed waste information provided. For the Hanford site, this included the subtraction of Double Shell Tank Waste (DSTW) labelled as "DST LLW" for generation rates as well as inventory. Based on the information provided in EPA's proposal, this waste stream appears to be more appropriately classified as HLW.

[E] Compilation of Information on U.S. Department of Energy Waste Management and Waste Management Initiatives, Developed in response to a query from Congressman Dingell dated October 30, 1992, prepared November 12, 1991.

[F] 57 Fed. Reg., p. 22054, May 26, 1992.

defense sites, ranked sixth overall. Table 3 ranks DOE sites according to the volume of low level mixed waste stored at each site as of May 1992. The INEL inventory is clearly the largest, although the proportion of TRU mixed waste intended for WIPP is not clear from DOE petition.

A number of issues are revealed by this analysis. First, the amount of waste generated is often similar in magnitude to the current inventory of waste. Hence, by reducing the amount of waste generated, DOE could use its available or newly developed capacity for dealing with the backlog of stored waste. For example, the annual generation of mixed waste at the Rocky Flats Plant (RFP) was more than half of the existing inventory (5,795 m³ generated compared to an inventory of 10,049 m³); DOE indicated to the Energy and Commerce Committee, in fact, that the annual generation rate at RFP was greater than the inventory (9,900 m³ generated compared to an inventory of 8,388 m³). At the Savannah River Site, the generation rate was approximately 1/7th of the current inventory (1,233 m³ generated compared to an inventory of 9,035 m³). DOE recently acknowledged that it was devoting half (49 percent) of its "waste management operations" (WMO) budget (\$3.1 billion in FY 1993) to handling newly generated waste rather than existing stored waste, for which 47 percent of the WMO budget was used.³⁹ Hence, a mixed waste generation moratorium could double the resources available annually for dealing with stored mixed wastes.

³⁹ Duffy, Leo, DOE, Letter to J.D. Werner, NRDC, July 9, 1992.

Second, the amount of waste generated at many sites declined dramatically between November 1991 and May 1992, suggesting the potential for additional waste reduction that may exist. For example, the waste generated by the Oak Ridge K-25 facility declined by more than 99 percent (537 m³ to 4 m³). EPA should conduct an independent audit of DOE operations to determine whether DOE has made adequate good faith efforts at waste minimization. Even a cursory review of the data submitted by DOE indicates that significant waste reduction opportunities exist. For example, although the waste generation at RFP was halved between November 1991 and May 1992, EPA's proposal indicated that it was prepared to grant DOE a case-by-case exemption for an additional 5,795 m³/year of mixed waste generated at RFP, the technical justification for generating that waste is questionable. In early 1992, President Bush and Secretary of Energy James Watkins announced that the Rocky Flats Plant would be closed and that the last production project intended for RFP would be cancelled. Hence, some of the mixed waste resulting from production at RFP could be eliminated. EPA should not grant DOE a case-by-case exemption for waste that will not, or need not, be generated.⁴⁰

Even DOE acknowledges the importance of waste reduction for obtaining needed mixed waste capacity. In its application DOE

⁴⁰ A significant amount (5,784 m³) of newly generated mixed waste at RFP is pondcrete/saltcrete resulting from environmental restoration projects (e.g., Solar Ponds). But, some mixed wastes (e.g., glovebox waste) may be eliminated by curtailed production.

asserts, as part of its "good faith effort" demonstration, that it is committed to waste minimization.⁴¹ To bolster this assertion, DOE offers its Environmental Restoration and Waste Management Five-Year Plan as evidence of this commitment. Unfortunately, this Five-Year Plan is technically unreliable (see Attachment 4) and has no apparent relationship to actual DOE plans.⁴² EPA should not rely on DOE's unsubstantiated assertions and should independently evaluate DOE's waste minimization activities.

Far from demonstrating a serious commitment to meaningful waste minimization, DOE appears to continue to unnecessarily generate and make plans to generate additional mixed wastes.⁴³ One example, is DOE's stated plan to process plutonium oxide residues to metallic form, through hydrofluorination, which would produce significant quantities of additional mixed wastes.⁴⁴ Given the lower stability of plutonium metal, the increased risk of diversion and proliferation, and the lack of need for additional supplies of metallic plutonium, there is no apparent reason for this plutonium processing except institutional

⁴¹ 57 Fed. Reg. 22037.

⁴² 57 Fed.Reg. 22037, May 26, 1992

⁴³ This conclusion is based on an overall review of DOE operations. Due credit should be given, however, to certain DOE operations and contractors that have made substantial, if limited, efforts at institutionalizing waste minimization (see e.g., "Waste Minimization Crosscut", DOE/S-0049P, May 1992; and "DOE Announces Participation in EPA Voluntary Pollution Prevention Program", R-92-258, September 29, 1992.)

⁴⁴ DOE, "Rocky Flats Plant Transition Plan," July 1992.

inertia. DOE has failed to provide any legitimate technical justification for this processing. Presumably, DOE will apply to EPA for another case-by-case extension in order to generate these plutonium processing wastes.

Another obvious example of DOE's failure to undertake meaningful waste minimization is its plan to continue reprocessing of spent nuclear fuel at the Savannah River Site.⁴⁵ The U.S. Government has reprocessed spent nuclear fuel and target material for several decades to produce material for nuclear warheads. In light of the current surplus of nuclear materials the Energy Department has announced that reprocessing would be halted. Unfortunately, the Department has recently indicated that it would phase out reprocessing over a number of years. We believe that the Department has not justified continued reprocessing (see Attachment A). Hence, EPA should not grant a case-by-case extension for waste from reprocessing. At a minimum EPA should clarify DOE's precise plans for reprocessing, and release for public comment a more realistic assessment of DOE's waste generation plans based on a good-faith waste minimization effort to maximize mixed waste treatment capacity.

- b. DOE Has Failed to Enter into Binding Contractual Agreements or Otherwise Assure Treatment Will be Provided.**

⁴⁵ Clayton, Richard, DOE, testimony before the Senate Armed Services Committee, August 4, 1992.

EPA's regulations require that a successful applicant for a case-by-case extension to Land Disposal Restrictions:

...[enter] into a binding contractual commitment to construct or otherwise provide alternative treatment, recovery (e.g., recycling), or disposal capacity...⁴⁶

In proposing the extension for DOE, EPA acknowledges that DOE has failed to provide this commitment. The agency indicates that the normal demonstration required by a private applicant is not possible for a federal agency applicant because of the limitations imposed by the Anti-deficiency Act, which states, in relevant part,

An officer or employee of the United States Government or of the District of Columbia may not... (b) involve either government in a contract or obligation for the payment of money before an appropriation is made unless authorized by law.⁴⁷

We do not agree that this law prevents DOE from making a binding contractual commitment demonstration⁴⁸, or that such a commitment can be adequately provided by an IAG. Fortunately, the President and Congress agree. The Conference Report for the recently signed FFCA indicates, "the conferees do not agree that a 'binding contractual commitment' as the term is used in section 3004(h) of the Solid Waste Disposal Act includes an agreement

⁴⁶ 40 CFR 268.5(a)(2).

⁴⁷ 31 USC 1341(a)(1)

⁴⁸ Standard multiyear government contracts routinely limit outyear obligations to the availability of appropriated funds pursuant to 31 USC 1341. EPA could compel DOE to enter into multiyear contracts with this standard contract language. An IAG could be used to supplement these contracts to provide renegotiation of schedules if warranted.

between two or more federal departments, agencies, or instrumentalities."⁴⁹ If EPA believes, as it states, that DOE cannot make a binding contractual agreement demonstration then it should deny DOE's application for an extension rather than perpetuate the double standard toward regulation of DOE, which has caused much of the massive environmental devastation over the past 40 years.

As a substitute for the required binding contractual agreement demonstration, EPA has suggested that a national IAG be negotiated with DOE. Unfortunately the draft IAG⁵⁰ was not released publicly for public comment with the other elements of the proposed extension despite the fact that it was a critical, if fatally flawed, element of the extension proposal. Nonetheless, NRDC has obtained a copy of the draft IAG, which is intended to substitute for a binding contractual agreements. This draft IAG fails to provide even the minimum requirements already negotiated with DOE for individual sites by EPA Regional offices.⁵¹ The national IAG approach was therefore not only

⁴⁹ "Federal Facility Compliance Act of 1992, Conference Report [To accompany H.R. 2194], Report 102-886, September 22, 1992, p. 22.

⁵⁰ The Draft IAG has not yet been released for public review, but was obtained by NRDC through an informal mechanism.

⁵¹ For example, Region X in Seattle, Washington, and Washington State have negotiated an IAG for the Hanford Site with requirements that provide greater confidence that they will lead to safe treatment for mixed waste, such as more regular and more complete progress reports. See Milestone 26 of "Hanford Federal Facility Agreement and Consent Order": Hanford Land Disposal Restrictions Plan for Mixed Wastes (April 10, 1990).

contrary to the intent of Congress, but would have seemed to turn the clock back to more DOE "self regulation." Moreover, even if DOE believes that its petition for an extension should still be revived for another purpose, it must still face the hurdle of developing legitimate binding contractual commitments, which are more appropriately handled on a site-by-site basis.

Finally, NRDC objects to EPA's attempt to make findings necessary to the proposed extension in piecemeal rulemakings. If EPA wishes to solicit comments on options for interpreting demonstration requirements (e.g., 40 CFR 268.5(a)(2)) an Advanced Notice of Proposed Rulemaking would be appropriate. It is completely inappropriate to require parties who wish to reserve their right to appeal to comment on what is a wholly speculative proposal. EPA has not even proposed a resolution to a fatal stumbling block to granting the extension at issue - the 40 CFR 268.5(a)(2) demonstration - but EPA apparently now seeks to require parties to go to the expense of providing comments on other findings, based on EPA's speculation that it would someday propose to make a finding of compliance with 40 CFR 268.5(a)(2). If and when EPA proposes to make all the findings necessary to take final agency action, EPA should then accept comments on all such findings and on the proposed action as a whole. NRDC reserves the right to provide further comments on each necessary finding at such time, if any, that EPA proposes to grant the extension at issue.

c. DOE Has Failed to Demonstrate that the Lack of Mixed Waste Capacity is Due to Circumstances Beyond its Control.

EPA's regulations require that a successful application for a case-by-case extension to Land Disposal Restrictions demonstrate that:

...[d]ue to circumstances beyond the applicant's control, such alternative capacity cannot reasonably be made available by the applicable effective date. This demonstration may include a showing that the technical and practical difficulties associated with providing the alternative capacity will result in the capacity not being available by the applicable effective date...⁵²

EPA offers two factors "beyond DOE's control" that constrain DOE from meeting its mixed waste requirements: technological uncertainty and backlog of other wastes.⁵³ Technical hurdles certainly exist to addressing DOE's mixed waste. EPA should not merely determine whether some hurdles remain, but whether DOE has taken reasonable actions to eliminate existing roadblocks to the safe treatment of mixed waste.

⁵² 40 CFR 268.5(a)(3).

⁵³ 57 Fed.Reg 22040 and 22041, May 26, 1992.

One of the technical problems identified by DOE is that processes designed for non-radioactive hazardous waste treatment cannot be used for mixed wastes without redesigning them to control for radioactive contamination, ensure that radioactive contaminants are immobilized in the treated wastes, and provide for radiation shielding.⁵⁴

While this is certainly a reasonable assertion, DOE has failed to provide sufficient information to quantify the extent of this problem. Many radioactive contaminants have limited half-lives and may decay quickly rendering them non-radioactive. Other contaminants have half-lives of thousands, millions or billions of years and must be isolated from the environment virtually forever. Also, some radionuclides are only weak beta or gamma radiation emitters, and therefore present few shielding problems; while other radionuclides are strong gamma emitters, and require substantial shielding to protect workers. The information provided in DOE's application is insufficient to provide a basis to determine the radioactive characteristics of each waste and the limitations they pose to treatment. Moreover, DOE's application failed to indicate whether DOE has even gathered this information for internal use.⁵⁵ Because of the unique characteristics of different radionuclides, DOE should develop adequate information on radionuclide content of different waste streams, and EPA should check its accuracy, so that safe

⁵⁴ 57 Fed.Reg. 22040, May 26, 1992.

⁵⁵ NRDC attempted to contact several DOE personnel to obtain this information, but in each case phone calls were either not returned or DOE staff referred questions to public relations personnel who were technical incapable of responding.

treatment plans can be developed for individual waste streams at individual sites based on the identification of treatability, which consider both radionuclides and hazardous constituents.

Another "technical uncertainty" identified in the proposed extension is drawn from a report by the Office of Technology Assessment, which indicates expected opposition by "some public interest groups to siting such facilities."⁵⁶ By characterizing the roadblock in this manner, EPA ignores the findings of a more recent report by the Office of Technology Assessment that indicates that, because of a legacy of deception and mismanagement, opposition by public interest groups to siting of DOE facilities may be well justified.⁵⁷ The root cause of the problem is not simply public opposition to siting new mixed waste treatment facilities, but rather DOE's lack of credibility and failure to engage in meaningful public participation. The factors should be considered in any realistic program for solving the mixed waste problem.

The second factor deemed to be "beyond DOE's control" is the "Backlog of other wastes." We agree that these waste compete for treatment capacity with CBC-applicable mixed wastes, but DOE has failed to take adequate waste minimization measures to reduce treatment capacity demand. We have discussed the importance of waste minimization above regarding 40 CFR 268.5(a)(1). We are

⁵⁶ OTA, "Partnerships Under Pressure: Managing Commercial Low-level Radioactive Waste", OTA-O-426, November 1989.

⁵⁷ Office of Technology Assessment, "Complex Cleanup", OTA-O-484, February 1991.

also concerned about DOE's proposal to establish a system for setting priorities for treating wastes. We have no dispute about the obvious need to consider a variety of criteria in setting waste management priorities, but believe that any such system be developed with meaningful public participation and respect for the legal rights of EPA, states and Native American Tribes, and be based on a legitimate, technically defensible methodology. In 1991, DOE proposed a priority system for environmental restoration that did not provide for adequate public participation, respect legitimate rights and was not technically sound.⁵⁸ Before EPA accepts any priority system for treating mixed waste it should consider carefully the implications and provide for public comments on this acceptance. The four-factor system suggested in EPA's proposed exemption does not provide enough detail to comment on meaningfully.⁵⁹

⁵⁸ 56 Fed.Reg. 44078, September 6, 1991. NRDC submitted substantial comments on DOE's proposal in 1991. A "Comment-Response" document recently published by DOE fails to provide substantive responses to most of NRDC comments.

⁵⁹ 57 Fed.Reg.22041, May 26, 1992.

d. DOE Has Failed to Demonstrate that Existing and Planned Treatment Capacity will be Adequate for the Mixed Wastes to be Generated.

EPA's regulations require that a successful applicant for a case-by-case extension to Land Disposal Restrictions show that:

...[t]he capacity being constructed or otherwise provided by the applicant will be sufficient to manage the entire quantity of waste that is the subject of the application...⁶⁰

EPA failed to determine independently whether DOE's existing and planned treatment capacity was adequate for the mixed wastes to be generated primarily because the agency failed to consider the effect of non-CBC applicable mixed waste on the availability of treatment capacity. Total mixed waste generation inventory and generation are compared to CBC-applicable wastes in Table 4. In most cases, the CBC-applicable mixed waste was a relatively small proportion of the total mixed waste at the site. EPA's proposal failed to consider adequately the need for treatment capacity and appeared to provide only a vague, non-quantitative sense of the adequacy of DOE's treatment capacity plans.

In addition to the need to consider the impact of non-CBC wastes on treatment capacity, EPA should consider the need for pretreatment and sequential treatment (integrated treatment trains, such as are being developed by DOE's Office of Technology Development and various DOE field elements.). For example, the treatment chain required for the sodium-bearing wastes at INEL's ICPP was discussed above. More routinely, ash from the

⁶⁰ 40 CFR 268.5(a)(4).

TABLE 4

CBC- APPLICABLE MIXED WASTE AS PERCENTAGE OF TOTAL MIXED WASTE:
RANKED BY TOTAL INVENTORY [A]

Rank	Low-Level Mixed Waste Inventory (cubic meters as of May 1992)				
	Site [B]	CBC-Applicable [C]	NON-CBC Applicable	Total	CBC- Applicable/Total (Percent)
1	INEL	11,512.68	52,460.32	[A] 63,973.00	17.996%
2	K-25	30,482.04	3,021.96	33,504.00	90.980%
3	RFP	9.84	10,039.16	10,049.00	0.098%
4	SRS	42.35	8,993.05	9,035.40	0.469%
5	Y-12	153.00	7,166.00	7,319.00	2.090%
6	PORTS	6.80	4,224.20	4,231.00	0.161%
7	Fernald	1,575.39	1,883.61	3,459.00	45.545%
8	Hanford	666.60	1,985.40	2,652.00	25.136%
9	ORNL	0.06	822.94	823.00	0.007%
10	Sandia/Alb	2.20	773.80	776.00	0.284%
11	PGDP	464.71	169.29	634.00	73.298%
12	LANL	13.72	436.28	450.00	3.050%
13	LLNL	N.A.	388.00	388.00	0.000%
14	Pantex	3.74	217.26	221.00	1.692%
15	ANLE	3.79	68.71	72.50	5.228%
16	Weldon Sp	23.11	36.89	60.00	38.515%
17	Mound	0.01	48.99	49.00	0.020%
18	CISS	21.64	22.36	44.00	49.182%
19	BNL	N.A.	27.20	27.20	0.000%
20	LBL	N.A.	13.40	13.40	0.000%
21	ANLW	1.50	10.10	11.60	12.931%
22	BAPL	5.44	4.47	9.90	54.899%
23	KCP	N.A.	6.20	6.20	0.000%
24	West Vall.	0.02	4.98	5.00	0.380%
25	SSFL	0.03	3.67	3.70	0.784%
26	Sandia/Liv	N.A.	1.30	1.30	0.000%
27	KESS	N.A.	0.50	0.50	0.000%
28	NRF	0.26	0.02	0.28	92.857%
29	KAPL	N.A.	0.20	0.20	0.000%
30	Fermilab	N.A.	0.20	0.20	0.000%
31	NTS	0.00	0.00	0.00	0.000%
32	ITRI	0.90			
	TOTALS	44,989.82	92,829.56	137,819.38	32.644%

Source: 57 Federal Register, p. 22054, May 26, 1992.

[A] The inventory of Mixed Waste (MW) given is derived directly from the text of EPA's proposal.

Whether the inventory includes TRU MW or not is generally unclear from EPA's text.

For INEL, the inventory of MW includes three TRU MW streams.

[B] For explanation of abbreviations see Appendix

[C] N.A. - No CBC Applicable Waste Inventory given.

[D] For alphabetical listing see Appendix

generated without new treatment capacity being provided, was incineration of mixed waste will likely require stabilization. EPA should identify what wastes will be treated in which planned facilities and whether the required pretreatment or follow-up treatment will be available. In addition, as more waste is generated inventories will increase requiring greater mixed waste treatment capacity. There is no indication that EPA analyzed these various factors in considering the adequacy of planned treatment capacity.

e. DOE Has Failed to Provide a Detailed Schedule for Obtaining Permits.

EPA's regulations require that a successful applicant for a case-by-case extension to Land Disposal Restrictions must:

...[provide] a detailed schedule for obtaining required operating and construction permits or an outline of how and when alternative capacity will be available.⁶¹

We are not prepared to comment on DOE's demonstration of a schedule for obtaining required permits. However, we are concerned that EPA did not include in its proposal to grant a CBC-extension DOE's plans to conduct a Programmatic Environmental Impact Statement of its Environmental Restoration and Waste Management program (PEIS-EM) followed by site-specific

⁶¹ 40 CFR 268.5(a)(5).

environmental impact statements, as necessary.⁶² The PEIS-EM will help establish a framework for developing mixed waste treatment and disposal facilities.

f. DOE Has Failed to Assure Adequate Storage Capacity.

EPA's regulations require that a successful applicant for a case-by-case extension to Land Disposal Restrictions:

...[arrange] for adequate capacity to manage his waste during an extension and has documented in the application the location of all sites at which the waste will be managed...⁶³

Table 5 lists the amount of mixed waste storage capacity, current inventory and percent filled at each site according to data provided by DOE and published by EPA. Superficially, it appears that all sites have adequate storage capacity for the current inventory of mixed waste. Unfortunately, this superficial impression is false for individual sites and is fundamentally flawed for several general reasons.

The site with the highest percentage (87 percent) of filled mixed waste storage capacity is the Oak Ridge K-25 site. Assuming that only waste generated on-site is stored on site, the capacity would be sufficient for storing wastes from K-25, which generates 4 cubic meters/year. This assumption would be incorrect, however, since K-25 receives significant amount of

⁶² DOE, "Draft Implementation Plan for the Programmatic Environmental Impact Statement for the Department of Energy Environmental Restoration and Waste Management Program", January 1992.

⁶³ 40 CFR 268.5(a)(6).

TABLE 5

DISTRIBUTION OF MIXED WASTES AMONG SITES AND
PERCENTAGE OF STORAGE CAPACITY AT SITE FILLED: RANKED BY INVENTORY

Rank	Site [B]	Low-level Mixed Waste Inventory (as of May 1992)		Storage Capacity	
		Cubic Meters [A]	Percent of Total DOE LLMW	Cubic Meters	Percent Filled
1	INEL	[A] 63,973.00	46.42%	226,407.00	28.26%
2	K-25	33,504.00	24.31%	38,165.00	87.79%
3	RFP	10,049.00	7.29%	27,134.88	37.03%
4	SRS	9,035.40	6.56%	26,743.81	33.79%
5	Y-12	7,319.00	5.31%	9,544.60	76.68%
6	PORTS	4,231.00	3.07%	21,146.68	20.01%
7	Fernald	3,459.00	2.51%	12,085.00	28.62%
8	Hanford	2,652.00	1.92%	24,837.23	10.68%
9	ORNL	823.00	0.60%	1,041.11	79.05%
10	Sandia/Alb	776.00	0.56%	9,006.00	8.62%
11	PGDP	634.00	0.46%	2,676.27	23.69%
12	LANL	450.00	0.33%	28,540.69	1.58%
13	LLNL	388.00	0.28%	2,318.57	16.73%
14	Pantex	221.00	0.16%	1,483.00	14.90%
15	ANLE	72.50	0.05%	106.80	67.88%
16	Weldon Sp	60.00	0.04%	392.00	15.31%
17	Mound	49.00	0.04%	187.00	26.20%
18	CISS	44.00	0.03%	55.00	80.00%
19	BNL	27.20	0.02%	81.94	33.20%
20	LBL	13.40	0.01%	109.00	12.29%
21	ANLW	11.60	0.01%	208.00	5.58%
22	BAPL	9.90	0.01%	78.00	12.69%
23	KCP	6.20	0.00%	22.48	27.58%
24	West Vall.	5.00	0.00%	47,051.23	0.01%
25	SSFL	3.70	0.00%	353.03	1.05%
26	Sandia/Liv	1.30	0.00%	50.00	2.60%
27	KESS	0.50	0.00%	20.50	2.44%
28	NRF	0.28	0.00%	226,240.00	0.00%
29	Fermilab	0.20	0.00%	27.63	0.72%
30	KAPL	0.20	0.00%	5.00	4.00%
31	NTS	0.00	0.00%	0.00	0.00%
	TOTALS	137,819.38	100.00%	706,117.45	19.52%

Source: 57 Fed. Reg., p.22054, May 26, 1992.

[A] The inventory of Mixed Waste (MW) given is derived directly from the text of EPA's proposal. Whether or not the inventory includes TRU MW is generally unclear from EPA's text.

For INEL, the inventory of MW includes three TRU MW streams.

[B] For alphabetical listing see Appendix

For explanation of abbreviations see Appendix

mixed wastes from all of the Oak Ridge Field offices sites: Fernald, Paducah, Oak Ridge Y-12, Ashtabula Reactive Metals Extrusion Plant, Inc., and the Strategic Petroleum Reserve. As a result of DOE's decision to construct and operate a centrally located incinerator (K-1435) there, the K-25 site has become a mecca for mixed waste. In fact, less than two percent of the solids (326,000 lbs/18.7 million lbs) and 35 percent of liquids (1.3 million lbs/3.8 million lbs) wastes to be burned at the K-1435 incinerator were generated at K-25.⁶⁴ Such centrally-located facilities may be safer and more cost-effective than numerous individual treatment facilities at each site, but EPA must consider the implications of this strategy on DOE storage capacity. EPA cannot assure, for the purposes of storage capacity determination, that all waste will remain on-site where it is generated, but that the waste will be transported between sites for making a treatment capacity determination. DOE must be required to indicate exactly where all mixed waste is and will be stored, just as it must indicate exactly where it will be treated.

There are three general problems with EPA's determination of storage adequacy in the proposed CBC extension. First, EPA has evaluated the adequacy of DOE's storage capacity through 1994, even though it acknowledges that much of the waste will require storage for 20 more years - until 2014 when treatment facilities

⁶⁴ Siebach, P. and B. Westich, DOE and A. Murray, SAIC, "Radioactive Mixed Waste Incineration at the U.S. Department of Energy," DOE Incineration Conference, Albuquerque, NM, May 1992.

are completed. This concern is particularly important for those waste for which adequate treatment facilities are not expected to be available until well into the 21st Century, such as the high level waste scheduled for vitrification. The State of Idaho and DOE have already identified problems with the seismic integrity of the high level liquid radioactive waste storage tanks at INEL.

Second, we are concerned that EPA has failed to make an independent determination of the adequacy of the storage facilities that DOE asserts will be available. According to Table 12.4-1 of the proposal,⁶⁵ DOE is relying on RWMC buildings TSA1, TSA2, and TSA3 for "Mixed Waste Container Storage." The state of Idaho, however, has indicated that these buildings "are slated for interim status closure."⁶⁶ It is unclear why EPA included these buildings in its proposal to grant DOE a case-by-case extension when the state indicated to EPA five months earlier, based on information from DOE, that these buildings might not be available.

Third, recent press reports have indicated that "[m]ore than 16,000 steel barrels [possibly 2,545 m³] at Los Alamos National Laboratory that contain a combination of radioactive and hazardous chemical wastes" were being stored unsafely.⁶⁷ According to the reports, the drums have been buried under soil

⁶⁵ 57 Fed. Reg. 22070, May 26, 1992.

⁶⁶ Monsen, B.R., Idaho Department of Environmental Quality, Letter to M. Strauss, EPA, January 27, 1992.

⁶⁷ Easthouse, Keith, "LANL waste barrels improperly stored", Sante Fe New Mexican, August 6, 1992.

for storage on concrete pads, and cannot be readily inspected. Approximately 100 drums were found to be corroded, and several were leaking. EPA's proposed extension does not make clear whether these storage areas were included in its determination of "adequate" storage capacity. Again, EPA appears too willing to take DOE at its word that adequate mixed waste storage capacity exists.

ATTACHMENT A
EPA SHOULD NOT PLAN FOR CONTINUED REPROCESSING,
WHICH HAS LARGELY BEEN HALTED AND SHOULD BE CEASED ENTIRELY

a. DOE Has Indicated that Reprocessing is No Longer Necessary.

In its Reconfiguration Study released last year, the Energy Department acknowledged that

...plutonium requirements are reduced sufficiently to be satisfied by plutonium from retired warheads alone...it may be possible to produce new pits using only plutonium recovered from pits of retired warheads. Plutonium contained in existing oxides, wastes or residues would not be required and the scale of plutonium operations could be reduced.⁶⁸

Hence, the need for the F-Canyon and PUREX essentially disappeared. More recently, Energy Secretary Watkins indicated in an internal memorandum that

... [highly enriched uranium (HEU)] required for the nuclear weapons program can now be made available by means other than reprocessing [and that] the weapons complex of the future will not require the use of reprocessing facilities for HEU recovery.⁶⁹

Consequently, Secretary Watkins directed that "site specific actions and timetables" for the "most practical and prompt phaseout of reprocessing activities" be drawn up.

Congress should not wait for "timetables... for phaseout" to take action. FY 1993 funding for reprocessing activities, including new construction and any operations not necessary to

⁶⁸ DOE, Nuclear Weapons Complex Reconfiguration Study, DOE/DP-0083, January 1991, pp. 65 and 160.

⁶⁹ Watkins, James D., DOE, "Memorandum to Assistant Secretary for Defense Programs, et al., Subject: Highly Enriched Uranium Task Force Report," February 24, 1992.

prepare facilities for decontamination and decommissioning, should be eliminated.⁷⁰ The proposed budget for the ICPP alone is more than \$360 million in FY 1993 for operations and construction, as well as an additional \$100 million for waste management costs.⁷¹

Relatively small quantities of certain isotopes recovered by reprocessing, such as Pu-238,⁷² may be required in the future. Pu-238 was last produced in the U.S. in 1984.⁷³ DOE currently has a stockpile of more than 63 kilograms (139 lbs.) of Pu-238.⁷⁴ DOE's FY1993 budget includes more than \$80 million for operations of the H-Canyon,⁷⁵ primarily for recovery of

⁷⁰ DOE has recently formed a new ERWM Office of Transition Activities (EM-60), which is developing guidance and requirements for transferring facilities to ERWM. Deactivated facilities should continue to be funded from the original account until the facility has met these requirements and is ready for decontamination and decommissioning.

⁷¹ Bugger, Brad, DOE/ID, Personal Communication with Beatrice Brailsford, Snake River Alliance, March 26, 1992.

⁷² For example, Radioisotope Thermoelectric Generators (RTGs) for space mission energy sources. In addition, small quantities may be need for classified remote terrestrial reconnaissance posts.

⁷³ Lange, Robert G., DOE, "Radioisotope Power Systems for the Exploration of Space," presented at the 9th Symposium on Space Nuclear Power Systems, Albuquerque, New Mexico, January 13, 1992, p. 1. The U.S. has launched 37 Pu-238 fueled RTGs into space.

⁷⁴ Lange, p. 5; the Pu-238 is stored at Savannah River Site, Los Alamos Laboratory, and Mound.

⁷⁵ \$70 million is budgeted from Atomic Energy Defense Account/Materials Processing and \$14 million from Energy Supply Research and Development.

plutonium-238.⁷⁶ The Department has also stated that it is "reviewing the possibility of obtaining additional quantities of plutonium-238 from the Commonwealth of Independent States (former Soviet Union)."⁷⁷ Discussion between U.S. and Russian representatives regarding the purchase of Pu-238 for NASA space missions began in 1989. Following technical approval of the quality of the Russian Pu-238, negotiations have proceeded regarding the purchase of 5 kg of Pu-238 for \$6 million - far less than the funding required to start up and operate the H-Canyon to produce a similar quantity.⁷⁸ We are not necessarily endorsing any particular source of Pu-238. Instead, the need for Pu-238 should first be examined, and if a need exists all reasonable alternatives for obtaining the material and the resulting environmental impacts, should be considered. Use of the H-canyon at Savannah River for non-defense isotope production should not occur without a complete analysis of environmental impacts and alternatives.

b. Reprocessing Exacerbates Existing Waste Problems.

⁷⁶ DOE, FY 1993 Congressional Budget Request, Vol.1, DOE/CR-0006, January 1992, pp. 228-229; Vol.2, 165.

⁷⁷ DOE, FY 1993 Budget Request, Vol.1, p. 165.

⁷⁸ Rasor, Ned S., Letter to Senator Sam Nunn, March 12, 1992; Broad, William J., New York Times, "Sale of Plutonium by Russia to U.S. Faces Unseen Snag," March 23, 1992, A1.

In a reprocessing plant, fuel rods are dissolved in hot acid, which is then subjected to a series of chemical extractions to isolate selected radioactive materials such as plutonium and uranium. Highly radioactive materials such as cesium-137 and strontium-90 remain in the waste acid, which is then generally stored in underground tanks as a liquid (Hanford, Savannah River) or a calcined solid (INEL). In this process, the volume of the waste increases several thousand-fold from the original fuel to the final liquid and hundreds of times to the final solid calcined waste.

More than 40 years of military reprocessing in the U.S. has produced 399,000 cubic meters (105 million gallons) of high-level waste,⁷⁹ and a far larger quantity of low-level liquid radioactive waste.⁸⁰ (In contrast to the DOE program, spent commercial nuclear fuel is not reprocessed prior to disposal, but instead is stored in pools or above ground in "dry casks" prior to permanent disposal.) Massive environmental problems have been created by each DOE reprocessing facility. It is not clear whether it is possible, with existing technology, to resolve fully these waste problems. It is clear, however, that we should not be adding unnecessarily to these waste problems while we

⁷⁹ DOE/OCRWM, "Integrated Data Base for 1991: U.S. Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics", DOE/RW-0006, Rev. 7, October 1991.

⁸⁰ In addition, operation of a reprocessing facility for civilian spent fuel at a site near West Valley, New York from 1966-1972, produced 1,230 cubic meters (325,000 gallons, which comprises 0.3 percent of the HLW by volume, and 2.6 percent of the HLW by curie content.

spend enormous sums of money to try to solve the existing problems. It is useful to review briefly each of the major reprocessing facilities in the U.S. to understand the magnitude of the current environmental and financial costs that would be exacerbated by continuing reprocessing.

The twin "Canyon" chemical separations plants at Savannah River -- F and H -- have generated approximately 132,000 cubic meters (35 million gallons) of high-level waste.⁸¹ Operation of the F-and H-Canyon produces approximately 1.16 million and 1.5 million gallons, respectively, of high-level waste per year.⁸² In addition, annual operations of F- and H-Canyons generate approximately 460,000 cubic meters (121 billion gallons) per year of liquid low-level radioactive wastes, including contaminated cooling water and storm water runoff.⁸³ To handle the high level waste stored in tanks, DOE has constructed a waste vitrification facility costing approximately \$1 billion.⁸⁴ Discharges from the canyons into "Seepage Basins" have resulted in widespread groundwater contamination.⁸⁵

⁸¹ U.S. Department of Energy, Integrated Data Base for 1991: U.S. Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics, DOE/RW-0006, Rev. 7, October 1991, p. 44.

⁸² DOE, "Environmental Survey Preliminary Report, DOE/EH/OEV-10-P, August 1987, pp. 4-24.

⁸³ U.S. DOE, "FEIS: Continued Operation of K-, L-, and P-Reactors, Savannah River Site," (December, 1990), DOE/EIS-0147, p. 4-39.

⁸⁴ Known as the "Defense Waste Processing Facility."

⁸⁵ DOE, "Environmental Survey Preliminary Report, Savannah River Plant", DOE/EH/OEV-10-P, August 1987, p.4-23.

The Idaho Chemical Processing Plant (ICPP) at DOE's Idaho National Engineering Laboratory has produced 12,000 cubic meters (3 million gallons) of high-level waste.⁸⁶ In addition, the ICPP pumped almost 7 billion gallons of radioactive waste into an onsite underground well averaging nearly a million gallons a day between 1953 and 1974.⁸⁷ The expansion of ICPP, currently under way, would nearly double the plant's waste output to as much as two million gallons per day.⁸⁸

The costs for handling ICPP waste are significant and increasing. Construction costs for "temporary" long-term storage bins for calcined waste at ICPP have increased substantially. In the early 1980s DOE constructed the sixth set of storage bins for calcined wastes for approximately \$14 million. By 1989, DOE estimated the cost for the eighth set of storage bins at \$30 million.⁸⁹ DOE's FY 1993 Budget Request includes approximately \$100 million for waste management operations at the ICPP.

Reprocessing at the Hanford Reservation, primarily at the PUREX plant, has produced approximately 253,600 cubic meters (67

⁸⁶ Integrated Data Base, p. 43. High level waste at the ICPP is reduced in volume by approximately 6 times by "calcining" before interim storage in bins.

⁸⁷ Energy Research and Development Administration, "Waste Management Operations, Idaho National Engineering Laboratory", September 1977, ERDA-1536, September 1977, p. II-89.

⁸⁸ DOE, "Environmental Assessment: Fuel Processing Restoration at the Idaho National Engineering Laboratory", DOE/EA-0306, August 1987, p. 2-14.

⁸⁹ DOE/Idaho Operations Office, "Institutional Plan: FY 1986-FY 1991", November 1985, p. 15.

million gallons) of high-level wastes.⁹⁰ PUREX generates 3 cubic meters (800 gallons) of high-level waste per MT of fuel processed.⁹¹ Dozens of the high-level waste tanks have been found to be leaking. In addition, safety concerns have arisen about the potential for an explosion in at least one of the tanks. The construction cost for building a vitrification plant, similar to the SRS plant, to solidify the high level waste stored in underground tanks cleanup is expected to cost more than one billion dollars. Discharges from PUREX to percolation "cribs" have caused widespread groundwater contamination in the 200-East Area extending to the Columbia River. The ground water cleanup cost has not been accurately estimated.

Finally, cleaning up the relative small amount of reprocessing waste generated at West Valley Site is expected to cost nearly \$900 million dollars.⁹²

Perhaps more than any other activity in the nuclear weapons complex, reprocessing has been responsible for much of the massive environmental contamination that distinguishes the defense nuclear enterprise from U.S. civilian nuclear operations. To avoid exacerbating these environmental problems, as well as to exercise normal fiscal prudence, Congress should eliminate

⁹⁰ Integrated Data Base, p. 53.

⁹¹ U.S. Department of Energy, DEIS: Process Facility Modifications Project, DOE/EIS-011D, April 1986, 3.23.

⁹² U.S. Department of Energy, Environment, Safety and Health Needs of The U.S. Department of Energy, DOE/EH-0079, December 1988, v. 2, p. 229.

funding for continued reprocessing activities except those necessary to maintain the facilities and prepare them for decontamination and decommissioning.

ATTACHMENT B

COMPARISON OF DOE MIXED WASTE INFORMATION: DATA SUBMITTED TO REPRESENTATIVE DINGELL VS. TO THE EPA

Site [A]	DINGELL DATA [D]		EPA DATA [E]	
	Total Quantity LLMW Generated M3/Year [C]	Total Quantity LLMW Inventory M3 [C]	CBC-Applicable LLMW Generated M3/Year	Total Quantity LLMW Inventory M3 [B]
AMES	0.00	0.10		
ANLE	3.42	62.23	3.20	72.50
ANLW	0.95	9.10	0.85	11.60
BAPL	0.89	8.54	0.05	9.90
BNL	8.15	14.93	3.00	27.20
BTCO	0.00	3.84		
CISS	0.00	21.68		44.00
Fernald	695.00	2,431.43	586.00	3,459.00
Fermilab	2.14	0.01	0.08	0.20
GJPO	0.09	0.08		
Hanford	130.00	2,372.00	57.55	2,652.00
INEL	60.00	27,058.81	57.08	[B] 63,973.00
ITRI	1.00	1.10		
K-25	537.00	32,698.04	4.00	33,504.00
KAPL	0.10	0.00	0.10	0.20
KCP	0.82	4.93	0.82	6.20
KESS	0.35	0.00	0.35	0.50
LANL	84.54	316.63	14.42	450.00
LBL	1.07	11.90	0.28	13.40
LLNL	102.00	198.14	5.00	388.00
Mound	0.94	44.12	0.20	49.00
NRF	0.00	0.00		0.28
NTS	48.70	0.00		
ORNL	16.11	1,158.07	9.19	823.00
PGDP	36.08	576.45	26.44	634.00
PORTS	129.29	3,948.36	67.00	4,231.00
Princeton	0.02	0.02		
Pantex	26.97	180.19	4.00	221.00
RFP	9,900.56	8,388.19	5,795.19	10,049.00
Sandia/Alb	213.84	412.10	111.84	776.00
Sandia/Liv	0.32	0.85	0.00	1.30
SRS	1,237.00	9,035.40	1,233.43	9,035.40
SSFL	0.00	3.64	0.00	3.70
Weldon Sp	0.00	56.11		60.00
West Vall.	0.05	5.03	0.00	5.00
Y-12	1,943.02	10,426.30	750.02	7,319.00
TOTALS	15,180.41	99,448.23	8,730.10	137,819.38

[A] See abbreviation Appendix

[B] The inventory of Mixed Waste (MW) given is derived directly from the text of EPA's proposal. Whether the inventory includes TRU MW or not is generally unclear from EPA's text.

For INEL, the inventory of MW includes three TRU MW streams.

[C] Generation rates and inventory quantities were derived directly from the text of EPA's proposal developed for Rep. Dingell. For Hanford, INEL, SRS and WVDP, High Level Mixed Waste data was subtracted from the total mixed waste information provided. For the Hanford site, this included the subtraction of Double Shell Tank Waste (DSTW) labelled as "DST LLW" for generation rates as well as inventory. Based on the information provided in EPA's proposal, this waste stream appears to be more appropriately classified as HLW.

[D] Compilation of Information on U.S. Department of Energy Waste Management and Waste Management Initiatives, Developed in response to a query from Congressman Dingell dated October 30, 1992, prepared November 12, 1991.

[E] 57 Fed. Reg., pp. 22054, May 26, 1992.

ATTACHMENT C

CBC- APPLICABLE MIXED WASTE AS PERCENTAGE OF TOTAL MIXED WASTE [A]

Site [B]	Low-Level Mixed Waste Inventory (cubic meters as of May 1992) [B]			
	CBC-Applicable [C]	NON-CBC Applicable	Total	CBC Applicable/Total (Percent)
ANLE	3.79	68.71	72.50	5.228%
ANLW	1.50	10.10	11.60	12.931%
BAPL	5.44	4.47	9.90	54.899%
BNL	N.A.	27.20	27.20	0.000%
CISS	21.64	22.36	44.00	49.182%
Fernald	1,575.39	1,883.61	3,459.00	45.545%
Fermilab	N.A.	0.20	0.20	0.000%
Hanford	666.60	1,985.40	2,652.00	25.136%
INEL	11,512.68	52,460.32	[A] 63,973.00	17.996%
ITRI	0.90			
K-25	30,482.04	3,021.96	33,504.00	90.980%
KAPL	N.A.	0.20	0.20	0.000%
KCP	N.A.	6.20	6.20	0.000%
KESS	N.A.	0.50	0.50	0.000%
LANL	13.72	436.28	450.00	3.050%
LBL	N.A.	13.40	13.40	0.000%
LLNL	N.A.	388.00	388.00	0.000%
Mound	0.01	48.99	49.00	0.020%
NRF	0.26	0.02	0.28	92.857%
NTS	0.00	0.00	0.00	0.000%
ORNL	0.06	822.94	823.00	0.007%
PGDP	464.71	169.29	634.00	73.298%
PORTS	6.80	4,224.20	4,231.00	0.161%
Pantex	3.74	217.26	221.00	1.692%
RFP	9.84	10,039.16	10,049.00	0.098%
Sandia/Alb	2.20	773.80	776.00	0.284%
Sandia/Liv	N.A.	1.30	1.30	0.000%
SRS	42.35	8,993.05	9,035.40	0.469%
SSFL	0.03	3.67	3.70	0.784%
Weldon Sp	23.11	36.89	60.00	38.515%
West Vall.	0.02	4.98	5.00	0.380%
Y-12	153.00	7,166.00	7,319.00	2.090%
TOTALS	44,989.82	92,829.56	137,819.38	32.644%

Source: 57 Fed. Reg., p. 22054, May 26, 1992.

[A] The inventory of MW given is derived directly from the text of EPA's proposal. Whether the inventory includes TRU MW or not is generally unclear from EPA's text. For INEL, the inventory of MW includes three TRU MW streams.

[B] For explanation of abbreviations see Appendix

[C] N.A. - No CBC Applicable Waste Inventory given.

ATTACHMENT D

DISTRIBUTION OF MIXED WASTES AMONG SITES AND
PERCENTAGE OF STORAGE CAPACITY AT SITE FILLED

Site	Low-level Mixed Waste Inventory (as of May 1992)		Storage Capacity	
	Cubic Meters [A]	Percent of Total DOE LLMW	Cubic Meters	Percent Filled
ANLE	72.50	0.05%	106.80	67.88%
ANLW	11.60	0.01%	208.00	5.58%
BAPL	9.90	0.01%	78.00	12.69%
BNL	27.20	0.02%	81.94	33.20%
CISS	44.00	0.03%	55.00	80.00%
Fernald	3,459.00	2.51%	12,085.00	28.62%
Fermilab	0.20	0.00%	27.63	0.72%
Hanford	2,652.00	1.92%	24,837.23	10.68%
INEL	(A) 63,973.00	46.42%	226,407.00	28.26%
K-25	33,504.00	24.31%	38,165.00	87.79%
KAPL	0.20	0.00%	5.00	4.00%
KCP	6.20	0.00%	22.48	27.58%
KESS	0.50	0.00%	20.50	2.44%
LANL	450.00	0.33%	28,540.69	1.58%
LBL	13.40	0.01%	109.00	12.29%
LLNL	388.00	0.28%	2,318.57	16.73%
Mound	49.00	0.04%	187.00	26.20%
NRF	0.28	0.00%	226,240.00	0.00%
NTS	0.00	0.00%	0.00	0.00%
ORNL	823.00	0.60%	1,041.11	79.05%
PGDP	634.00	0.46%	2,676.27	23.69%
PORTS	4,231.00	3.07%	21,146.68	20.01%
Pantex	221.00	0.16%	1,483.00	14.90%
RFP	10,049.00	7.29%	27,134.88	37.03%
Sandia/Alb	776.00	0.56%	9,006.00	8.62%
Sandia/Liv	1.30	0.00%	50.00	2.60%
SRS	9,035.40	6.56%	26,743.81	33.79%
SSFL	3.70	0.00%	353.03	1.05%
Weldon Sp	60.00	0.04%	392.00	15.31%
West Vall.	5.00	0.00%	47,051.23	0.01%
Y-12	7,319.00	5.31%	9,544.60	76.68%
TOTALS	137,819.38	100.00%	706,117.45	19.52%

Source: 57 Fed. Reg., p.22054, May 26, 1992.

[A] The inventory of Mixed Waste (MW) given is derived directly from the text of EPA's proposal. Whether or not the inventory includes TRU MW is generally unclear from EPA's text.

For INEL, the inventory of MW includes three TRU MW streams.

[B] For explanation of abbreviations see Appendix